

JENNER & BLOCK LLP
STEVEN B. FABRIZIO (*pro hac vice*)
sfabrizio@jenner.com
1099 New York Avenue, N.W.
Suite 900
Washington, DC 20001
Telephone: (202) 639-6000
Facsimile: (202) 661-4823

GIANNI P. SERVODIDIO (*pro hac vice*)
gps@jenner.com
919 Third Avenue, 37th Floor
New York, NY 10022
Telephone: (212) 891-1600
Facsimile: (212) 891-1699

Attorneys for Plaintiffs

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

COLUMBIA PICTURES
INDUSTRIES, INC., *et. al.*

Plaintiffs,

v.

GARY FUNG, *et. al.*

Defendants.

Case No. CV-06-05578 SVW (JCx)

The Hon. Stephen V. Wilson

**SUPPLEMENTAL DECLARATION
OF ELLIS HOROWITZ PURSUANT
TO THE COURT'S AUGUST 25, 2009
ORDER RE PLAINTIFFS' MOTION
FOR SUMMARY JUDGMENT ON
LIABILITY**

**REDACTED PURSUANT TO
PROTECTIVE ORDER**

SUPPLEMENTAL DECLARATION OF ELLIS HOROWITZ

I, Ellis Horowitz, declare as follows:

1. My name is Ellis Horowitz and I currently hold the position of Professor of Computer Science and Electrical Engineering at the University of Southern California. I am a past Chair of USC's Computer Science Department and have substantial experience with the computer science principles discussed in this declaration. I have previously submitted a declaration in support of plaintiffs' motion for summary judgment, sworn to September 6, 2007 ("Sept. 2007 Declaration"), which I understand is part of the Court record at Docket #310. Further details of my qualifications can be found in that Sept. 2007 Declaration at ¶¶ 3-6 and Exhibit A.

2. This declaration supplements my Sept. 2007 Declaration, and familiarity with the general principles regarding BitTorrent technologies and the "Fung Sites" defined and explained in that declaration is presumed. I was asked to conduct the analyses described in this declaration in connection with plaintiffs' response to the Court's Order of August 25, 2009, requesting supplemental briefing and evidence regarding downloads of plaintiffs' copyrighted works by defendants' United States users. In conducting these analyses, I have reviewed the source code and data sets produced by defendants in this case, as well as other data and documents from their production, and the publicly available information on defendants' websites.

3. The observations and conclusions set forth below are based upon my specialized knowledge, education, and experience as applied to the facts and circumstances in this case. If called upon, I could and would testify as to the matters contained herein.

I. SUMMARY OF CONCLUSION

4. As I explain below, certain data produced by defendants establishes

1 that defendants' users located in the United States have downloaded dot-torrent files
2 corresponding to the content files identified in Exhibit 1 to this declaration, which I
3 am advised are copyrighted works the rights to which are held by the plaintiff
4 motion picture studios.

5 **II. ANALYSIS**

6 5. By way of background, as I explained in my Sept. 2007 Declaration,
7 the Fung Sites facilitate the copying and distribution of files among users via
8 BitTorrent peer-to-peer technology. BitTorrent is particularly optimized for the
9 copying and distribution of large files, such as video files of movies and television
10 programs, between participating users. Among other things, the defendants'
11 websites index dot-torrent files available for download by defendants' users. The
12 only purpose of a dot-torrent file is to enable users to identify, locate, and download
13 a copy of the actual content item referenced by the dot-torrent file. *See* Sept. 2007
14 Declaration ¶¶ 21-24.

15 6. As I also explained in my Sept. 2007 Declaration, on defendants'
16 websites, a user can download a dot-torrent file directly by clicking on a "download
17 torrent" button or link¹ on the website. Once the user has clicked the "download
18 torrent" button or link, the user's computer is commonly configured such that the
19 desired content file should begin downloading to the user's computer without any
20 further action or input from the user. *See* Sept. 2007 Declaration ¶ 27.

21 7. A dot-torrent file contains, in what is called its "info" section, "hash"²
22 values that uniquely identify the pieces of the corresponding content file. A hash of

23 ¹ A "link," or "hypertext link" commonly appears on a web page as a colored and
24 underlined word or symbol that a computer user can "click" on to retrieve another
25 web page or to download a file.

26 ² A "hash" is a unique digital identifier of a certain data item. It is usually written as
27 hexadecimal number forty digits long, where each digit can be 0-9 or A-F.
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1 the “info” section of the dot-torrent file is called its “infohash.” An infohash
2 identifies a specific content file. Any dot-torrent file with the same infohash
3 corresponds to the same content file. Thus, any user who downloads a file
4 represented by a particular infohash value will receive exactly the same content file,
5 that is an exact digital copy of the content file. It does not matter whether the dot-
6 torrent file represented by the infohash was obtained from the Isohunt website, one
7 of defendants’ other websites or another source altogether.

8 8. Defendants have produced data regarding their websites in this
9 litigation. The Isohunt website [REDACTED]

10 [REDACTED] The data supplied by defendants includes [REDACTED]
11 [REDACTED]
12 [REDACTED]

13 [REDACTED] This data is stored [REDACTED].

14 Server Log Data

15 9. In general, whenever a user downloads a dot-torrent file from the
16 Isohunt website, the user’s computer sends certain information to the Isohunt server,
17 including the user’s Internet Protocol (“IP”) address, the date and time of the
18 communication, and the identity of the dot-torrent file that the user requests. The
19 same is true when a user communicates with one of the other Fung Sites. When the
20 user communicates with one of defendants’ tracker servers, the user’s computer
21 sends certain information including the user’s IP address and the infohash of the
22 dot-torrent file for which the user is downloading or making available for others to
23 download. I refer to this data as “Server Log Data.” This Server Log Data would
24 reveal the individual downloads of specific dot-torrent files by individual users.

25 10. Server Log Data from defendants’ websites would identify user
26 downloads of dot-torrent files, which, in the normal course, would automatically
27 initiate the downloading of the referenced content file; Server Log Data from
28

1 defendants' tracker servers would identify completed downloads of the content files.
2 With Server Log Data from both defendants' websites and tracker servers one could
3 readily follow a user's downloading of a content file, from the initial request for a
4 dot-torrent file to the completion of the download of the content file.

5 11. The IP addresses from the Server Log Data would allow identification
6 of the geographic location of the downloading user. There are a number of
7 established and reputable commercial services that provide a "geolocation" lookup
8 to associate IP addresses with geographic locations. This is now fairly standard
9 technology, and it is quite accurate. Geolocation tools can identify the location of
10 an IP address down to the city level with reasonable accuracy. At the state level,
11 geolocation tools are highly accurate. At the country level, the accuracy of
12 geolocation tools approaches 100%.

13 12. From the above, it becomes clear that, if defendants had produced
14 Server Log Data for their websites and trackers, one would be able to easily identify
15 downloads of content files by users located in the United States. The Server Log
16 Data in fact would have provided the best (and a conclusive) source of information
17 as to downloads by United States users.

18 13. My understanding is that defendants did not produce Server Log Data,
19 at least not in a format usable as described above.

20 Registered User Data

21 14. The Isohunt website permits its users to "register" with the website, and
22 [REDACTED] Registration is a process whereby
23 users supply defendants with certain information about themselves, including their
24 email address. When those registered users are logged in to the website, [REDACTED]

25 [REDACTED]

26 [REDACTED]

27 [REDACTED]

28

1 [REDACTED]
2 [REDACTED]
3 15. Ostensibly, one value to users of registering is that they are provided
4 with certain additional tools to “manage” their interactions with the site. For
5 instance, Isohunt provides registered users with the ability to see a summary of the
6 files they have uploaded or downloaded, and a user must register in order to upload
7 or post in a forum.

8 16. Defendants collect and store [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]

12 For purposes of illustration, Exhibit 2
13 hereto is [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED].

18 17. [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 [REDACTED]
25 [REDACTED]
26 [REDACTED]
27
28

1 [REDACTED]³ [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED].

5 18. Using a database query, I extracted [REDACTED]
6 [REDACTED] [REDACTED]
7 [REDACTED] I used a well-known and reliable online service
8 called MaxMind to look up the geolocation data of each IP address. [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED].

12 19. [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED] Thus, I was able to identify about [REDACTED]
18 registered users located in the United States who downloaded files from defendants'
19 "Video/Movies" and "TV" categories.⁴ Overall, defendants' data show that [REDACTED]

20 _____
21 ³ The IP address is stored represented as set of hexadecimal numbers, where each
22 digit can be 0-9 or A-F, but that can be easily converted to a standard representation
as a set of decimal numbers, such as 209.50.85.24, with complete accuracy.

23 ⁴ Of course, the data set analyzed here [REDACTED]
24 [REDACTED]
25 [REDACTED] . Based on my review of defendants' production
documents, [REDACTED]
26 [REDACTED]
27 [REDACTED].

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[REDACTED]

20. The next step in the process was to identify for which of those dot-torrent files the actual referenced content could be verified as being a true copy of a work owned by one of the plaintiff motion picture studios. That involved (a) identifying which works were owned by a plaintiff, and (b) determining that the actual content referenced by that dot-torrent file had been downloaded and verified. I should note that users search for content on defendants' websites based on the descriptions in the dot-torrent files. While there may be limited instances in which the content referenced by a dot-torrent file does not match the description in the dot-torrent file itself, defendants' system depends upon a reasonable level of accuracy. Nevertheless, to be absolutely certain for this analysis, the only works included were those for which the content was downloaded and verified. Both the ownership and content verification analyses were conducted by others, who I understand are submitting declarations attesting to their analyses. For this aspect of my analysis, I relied upon the results of their analyses.

21. Exhibit 1 hereto contains a chart identifying [REDACTED] unique dot-torrent files that correspond to content files for which ownership and content have been verified. Each of these files has been downloaded by defendants' users in the United States, [REDACTED]. Exhibit 1 also contains the number of downloads by defendants' users not located in the United States.

22. Obviously, because the data set [REDACTED] was very small, the analyses we were able to conduct reflects only a tiny portion of the downloads of these files. Undoubtedly, were we to have had access to the Server Log Data, that data would have shown many additional downloads by defendants' U.S. users.

23. Attached hereto as Exhibit 4 is a list of dot-torrent files identified by title and infohash, each of which I understand to have been verified, as part of a statistical analysis performed by Dr. Richard Waterman, as corresponding to a content file containing a copyrighted work the rights to which are held by the plaintiff motion picture studios.

24. Attached hereto as Exhibit 5 are excerpts of documents produced by defendants that indicate that about [REDACTED] [REDACTED]. [REDACTED] is corroborated by online sources of website traffic information such as Alexa and Quantcast, as indicated in the printouts from Alexa and Quantcast attached hereto as Exhibit 6.

25. Attached hereto as Exhibit 7 are excerpts [REDACTED] [REDACTED]. As I explained in my Sept. 2007 declaration the seeder and leecher statistics indicate that other users have downloaded or are downloading the content file to which the dot-torrent file corresponds. *See* Sept. 2007 Declaration ¶ 25. Thus, a seeder count of greater than 1 or leecher count of 1 or greater establishes that other users have downloaded or are downloading the content file to which the dot-torrent file corresponds.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on September 14, 2009


Ellis Horowitz